Weighing the snow core to determine the water content

FEDERAL-STATE COOPERATIVE SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for

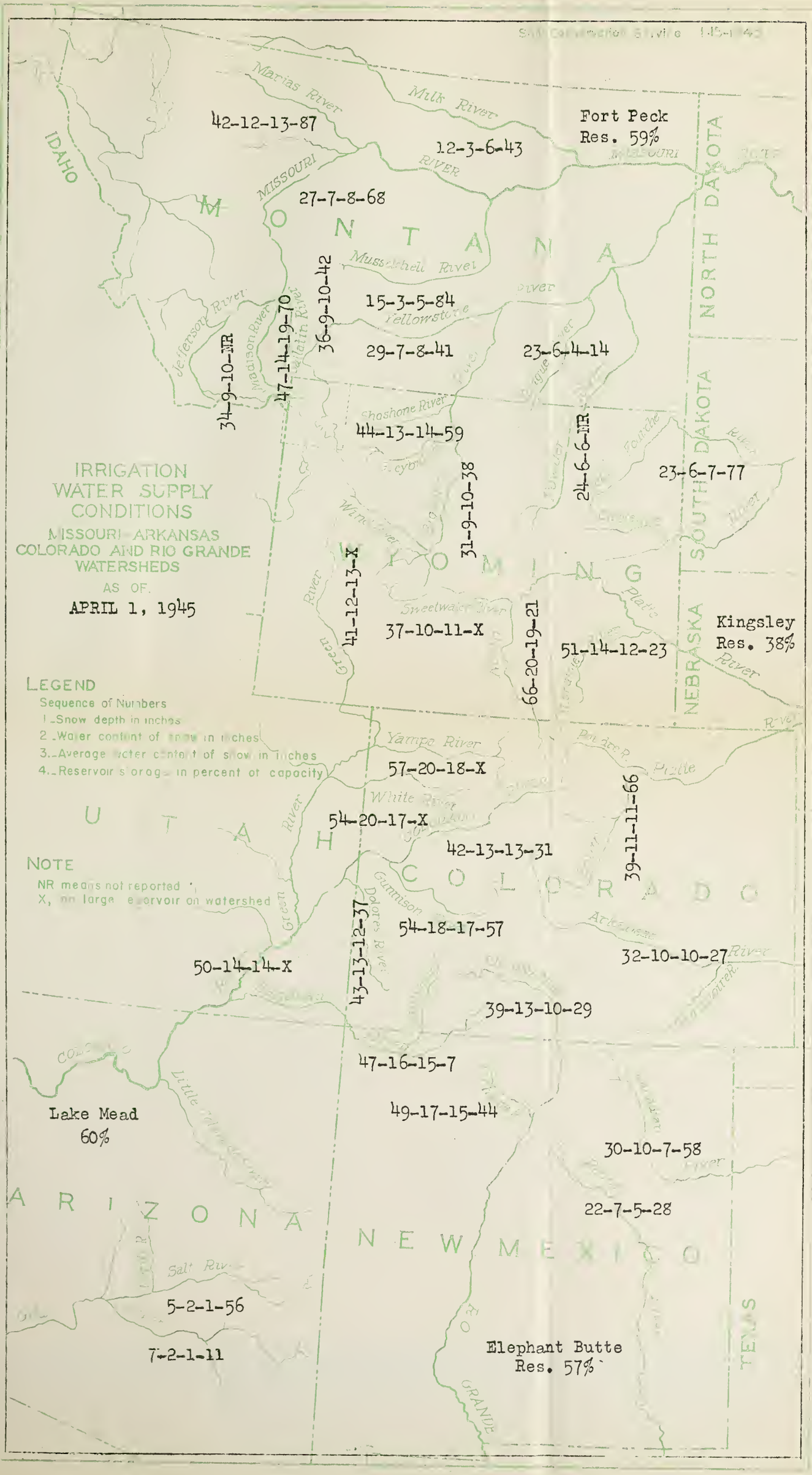
COLORADO RIVER DRAINAGE BASIN

APRIL 1, 1945

By

Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Colorado Agricultural Experiment Station

Data included in this report were obtained by the agencies named above in cooperation with the U. S. Forest Service, National Park Service, State Engineers of Colorado, Wyoming and New Mexico and other Federal, State and local organizations.


IRRIGATION WATER SUPPLY CONDITIONS
MISSOURI-ARKANSAS COLORADO AND RIO GRANDE WATERSHEDS
AS OF
APRIL 1, 1945
LEGEND
Sequence of Numbers
1.-Snow depth in inches
2.-Water content of snow in inches
3.-Average water content of snow in inches
4.-Reservoir storage in percent of capacity
NOTE
NR means not reported
X, no large reservoir on watershed
42-12-13-87
12-3-6-43
Fort Peck Res. 59%
27-7-8-68
36-9-10-42
47-14-19-70
34-9-10-NR
15-3-5-84
29-7-8-41
23-6-4-14
44-13-14-59
24-6-6-NR
23-6-7-77
31-9-10-38
41-12-13-X
37-10-11-X
66-20-19-21
51-14-12-23
Kingsley Res. 38%
57-20-18-X
54-20-17-X
42-13-13-31
39-11-11-66
54-18-17-57
43-13-12-37
50-14-14-X
32-10-10-27
39-13-10-29
47-16-15-7
49-17-15-44
Lake Mead 60%
30-10-7-58
22-7-5-28
5-2-1-56
7-2-1-11
Elephant Butte Res. 57%
MONTANA
IDAHO
WYOMING
SOUTH DAKOTA
NORTH DAKOTA
NEBRASKA
UTAH
COLORADO
ARIZONA
NEW MEXICO
TEXAS
Marias River
Milk River
MISSOURI RIVER
Musselshell River
Yellowstone River
Jefferson River
Madison River
Shoshone River
Powder River
Tongue River
Bighorn River
Wind River
Sweetwater River
Green River
Platte River
Yampa River
White River
Gunnison
Dolores River
Arkansas River
Little Colorado River
Salt River
RIO GRANDE

APRIL 1, 1945

WATER SUPPLY OUTLOOK

COLORADO RIVER

The general outlook for the Colorado River drainage in Colorado and Wyoming is good. Recent storms in the Upper Green River Valley have improved the outlook for this season's runoff. In Arizona, the Salt River water supply situation is fairly good because of the substantial reservoir storage. No shortage is expected in this valley. For the Gila, conditions are not so favorable.

COLORADO RIVER AND TRIBUTARIES ABOVE GRAND JUNCTION IN COLORADO

During March the average water content of the snow cover on this drainage increased 3 inches. The amount of water in snow storage is now 12.7 inches which is only slightly below normal and 2 inches more than it was a year ago at this time. On Grand Mesa the snow accumulation during the past month increased the water content at Trickle Divide by 8½ inches to a total of 32.5. At Alexander Lakes the increase was 7½ inches and at Mesa Lakes 6½. The runoff in the Blue River will probably fill the Green Mountain Reservoir to spillway elevation. On this watershed the present water content is approximately 15 inches as compared with 12 a year ago. At Glenwood Springs the flow of the Colorado River for the period April - July, 1945 will be approximately 1,100,000 acre-feet and for the Roaring Fork at Glenwood the flow will be 650,000 acre-feet for this same period. In the Grand Lake area the water content of the snow now averages 14 inches as compared with 11 last year at this time. Soil moisture generally, both in the mountains and over the farming areas of the main stream and its tributaries has improved but is probably still somewhat subnormal in the mountain country.

The over-all prospects for the Colorado River, and its tributaries above Grand Junction, are quite favorable, however, the runoff will in all probability be a little under normal. One adverse factor being the possibility that a part of the snow melt will be retained in the soils of the watershed which will reduce somewhat the flow of the streams.

GUNNISON RIVER

Snow conditions on the headwaters of the Gunnison and its tributaries are now slightly above normal and just equal to that of a year ago. On this drainage area the March storms added an average of 4.7 inches to the water content of the snow, bringing the total to 17.9 on April 1. The expected runoff of the North Fork of the Gunnison at Somerset for the period April - July 1945 will be about 400,000 acre-feet, or the same as last year. There appears to be little doubt as to the filling of the principal reservoirs on Grand Mesa during the coming spring runoff. The snow cover on Trickle Divide now averages about 7½ feet deep. The present storage in the Taylor Park Reservoir is 61,000 acre-feet, which is slightly more than half capacity. Last year the storage at this time was 87,000 acre-feet. It is expected that by the beginning of the irrigation season this reservoir will be filled to spillway elevation. Valley storms have added somewhat to the soil moisture but reports indicate deficiencies in some localities. Soil moisture in the mountains has improved. The outlook for the coming season's irrigation water supply for the Gunnison, and its tributaries, is very favorable. Early water will be plentiful and it is expected that the stream flow will continue fairly strong well into late summer.

YAMPA AND WHITE RIVERS

The outlook for both these streams is exceptionally good at this time in the assurance of ample water for irrigation needs this coming season. On the White watershed the average water content of the snow is now 20 inches, the past 10-year average being 17. The March accumulation of snow water on the headwaters of the White was nearly 9 inches. This total of 20 inches is the greatest since 1936 when the content was 20.6. The April - July 1945, runoff at Meeker will be 300,000 acre-feet. This expected discharge will be about 15 percent above normal. The snow covered valley areas are indicative of ample soil moisture. Streamflow is now approaching normal stage due to the beginning of the snow melt at the lower elevations.

On the Yampa drainage the March storms increased the snow-water storage nearly 6 inches to a total of 19.9. The snow melt on the headwaters of this stream is expected to result in an April - July runoff at Steamboat Springs of 250,000 acre-feet. This flow will approximate a normal condition. Likewise in this drainage the streamflow is now starting to increase and is approaching normal stage for this time of year. Soil moisture is reported to be satisfactory.

DOLORES RIVER

The prospects for a favorable runoff in this stream for the coming season were increased during March because of the addition of more than 4 inches of water to the snow pack over the headwaters of this river and its tributaries. The water content of the snow is now normal and is

one inch under that of last April 1. At Lizard Head the snow depth averages 5 feet and contains 19 inches of water. Last year it was 19.8. On the Lone Cone snow course, near the Groundhog Reservoir, the present water content of the snow is 14.1, last year 13.8. The Groundhog Reservoir, water supply for the Montezuma Irrigation Company lands in the vicinity of Cortez, Colorado, now has in storage 8,000 acre-feet, which is only 1/3 the capacity. Last year the amount held at this time was 15,000. It is rather doubtful if this reservoir will fill to capacity this season. The general conditions over the irrigated districts served by this river, are quite satisfactory. Precipitation has been normal, soil moisture is good, streamflow improving and above normal, and range and crop condition good. A shortage of irrigation water supply along the Dolores is not expected this season. Early water will be more than ample, however, the stream will probably not hold up much after July 15.

SAN JUAN RIVER

During March the water content of the snow over the headwaters of this stream and its tributaries increased by an average of 4 inches, bringing the total up to normal. This substantial improvement in conditions over the past month results in a very favorable water supply outlook for the coming season. As based on the present prospects the San Juan River flow will probably be about 20 percent above normal during the irrigation period. For the Animas River, at Durango, the estimated April - July 1945 flow will be 500,000 acre-feet which is about 10 percent above normal for this period of the year. On the west side of Wolf Creek Pass, headwaters of the San Juan, the snow on the Upper San Juan snow course is 8½ feet deep and contains 36 inches of water. Last year at this time the water content was 42. Reservoir storage is low. In the Vallecito Reservoir on Pine River, the present filling is only 9,000 acre-feet as compared with 29,000 a year ago. It is now at less than one-tenth of capacity. Lake Electra, on the Animas drainage, has nearly 6,000 acre-feet in storage which exceeds that of last year by about 20 percent. Throughout the irrigated districts served by the San Juan and its tributaries, the agricultural conditions are quite favorable. Above normal rainfall during March with favorable temperatures have resulted in satisfactory soil moisture. Stream flow is increasing slightly due to the melting of the snow at lower elevations. The range and crop conditions are good. The spring runoff will very materially increase the reservoir storage but it is doubtful if the total filling in Vallecito will exceed one-half its capacity of 126,000 acre-feet.

GREEN RIVER

The snow situation on the drainage area of this stream, and its tributaries, is slightly under normal, also below last year's average water content by about one inch. Recent storms in the Green River valley in western Wyoming very greatly improved the water supply outlook for the coming irrigation season in this section of the State. During March

the addition to the water content of the snow was relatively light, the increase being about 1½ inches. The river's discharge at Linwood, Utah, for April-July, 1945 is estimated to be about 1,000,000 acre-feet. The prospects for the coming irrigation season's water supply are reasonably good at this time, no shortage is anticipated. The usual spring runoff is assured but the river stage is likely to be somewhat below normal during the late summer. Water for meadow irrigation will be ample.

GILA AND SALT RIVERS

For the Gila watershed the April 1 snow surveys on courses at the headwaters of this stream indicate an average water content of about 2½ inches. Last year at this time the amount of water in the snow cover was only 1/10 inch. During the last couple of weeks of March the snow cover remained more or less constant over this drainage and because local storms added to the potential runoff it is expected that the river flow will approach normal stage and provide additional storage in the San Carlos Reservoir. The present storage is 120,000 acre-feet, last year at this time it was 273,000. In the vicinity of Springerville the soil moisture is normal with stream flow increasing due to snow melt. The range and crop conditions in this section are normal. The snow cover on the high mountains above 9,000 feet, is estimated to average about 2 feet.

The water content of the snow cover on the headwaters of the Salt, in eastern Arizona, remained fairly constant from March 15 to the last of the month. The average snow-water storage on April 1 of about 2 inches, is quite favorable for a substantial runoff in this stream where the flow will result in further storage in the principal reservoirs on the Salt. During the last half of March the total storage in these reservoirs increased about 135,000 acre-feet reaching a combined amount of 1,113,000. The present filling is now 83 percent of that a year ago. Recent storms in the McNary area have added to the potential water supply. The present prospects for the coming season's irrigation water supply for the Salt River project are favorable and no material water shortage is anticipated in this area during the summer months of 1945.

SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for
COLORADO RIVER BASIN
April 1, 1945

P R E C I P I T A T I O N D A T A

WATERSHED	STATE	Precipitation October 1 to March 31	Departure from Normal	Precipitation March	Departure from Normal
		Inches	Inches	Inches	Inches
Colorado	Colorado	8.75	-0.57	2.06	+0.18
Green	Wyoming	5.41	+0.43	1.34	+0.45
San Juan	New Mexico	4.75	-0.32	1.04	+0.14
Gila	Arizona	8.41	+0.63	2.84*	+1.58*
Gila	New Mexico	5.45	+0.34	0.79	-0.01

*March Precipitation tentative.

The accumulated precipitation since October 1 over the watershed of the Colorado River was above normal except on the San Juan and upper Colorado. Precipitation during March was above normal everywhere except on the Gila in New Mexico.

SUMMARY OF APRIL 1 SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS
BY WATERSHEDS

WATERSHEDS	Snow Depth			Water Content			Number Courses in Average	Snow Density			1945 Water Content in percent of	
	Ten Year Avg.*	1944	1945	Ten Year Avg.*	1944	1945		Ten Year Avg.*	1944	1945	Ten Year Avg.*	1944
COLORADO RIVER	In.	In.	In.	In.	In.	In.		Percent	Percent	Percent		
Green River	41.6	43.5	40.6	13.1	12.9	12.1	23	32	30	30	92	94
Colorado River**	43.9	40.8	42.3	13.1	10.6	12.7	20	30	26	30	97	120
Yampa River	54.8	53.3	57.4	17.9	14.2	19.9	4	33	27	35	111	140
White River	50.3	45.8	54.4	17.0	13.2	20.0	2	34	29	37	118	151
Gunnison River	53.0	56.6	53.6	17.2	17.9	17.9	10	32	32	33	104	100
Dolores River	39.8	43.8	42.8	12.5	13.9	12.8	4	31	32	30	102	92
San Juan River	44.2	50.9	46.7	15.4	18.3	15.5	7	35	36	33	100	85
Gila River	1.5	0.4	7.0	0.5	0.1	2.4	6	33	25	34	480	--
Salt River	1.0	0.0	5.3	0.4	0.0	1.9	5	30	--	36	475	--
Colorado River***	42.8	52.8	50.3	13.7	14.7	14.5	6	32	28	29	106	99
Virgin River	46.8	53.9	59.2	16.9	20.0	20.7	5	36	37	35	122	103

*Some for shorter periods **Above Grand Junction, Colorado ***Green to Virgin River

COLORADO RIVER WATERSHED

Summary of Federal and State Cooperative Snow Surveys

Issued April 10, 1945, at Fort Collins, Colorado

No.	Main Drainage and Snow Course	Local Drainage	Location			Elev.	National Forest	Apr. 1 Snow Cover Measurements					
			State	Locality	Description			Av. Snow Depth			Av. Water Content		
								Av.@	1944	1945	Av.@	1944	1945
								In.	In.	In.	In.	In.	In.
	GREEN RIVER												
44	East Rim Divide	Fish Creek	Wyo.	13mi.SE.Bondurant	32-37N-111W	7950	Teton	38.3	31.1	32.9	11.4	7.1	8.6
23	Dutch Joe R.S.	Dutch Joe Cr.	"	12mi.N.Elkhorn	33-31N-104W	8700	Wyoming	29.8	19.2	33.6	7.6	4.5	6.9
24	Mulligan Park	Surveyor Cr.	"	Fremont Lake	17-35N-108W	8900	"	35.5	26.5	31.2	9.8	6.2	8.5
25	Kendall R.S.	Green River	"	27mi.NW.Pinedale	23-38N-110W	7900	"	31.3	24.8	23.9	10.9	7.5	7.2
26	Loomis Park	Beaver Cr.	"	25mi.NW. "	14-37N-111W	8500	"	46.7	43.3	37.8	15.1	11.8	10.6
27	Snyder Basin R.S.	S.Piney Cr.	"	22mi.W.BigPiney	15-29N-114W	8040	"	36.8	33.1	33.2	11.2	9.9	9.7
28	Piney-LaBarge	LaBarge Cr.	"	24mi.W.BigPiney	19-29N-114W	8820	"	48.8	46.3	48.5	15.8	13.2	15.5
23	Daniels-Strwbrry	Strawberry R.	Utah	20mi.NE.Provo	17&20-2S-12W	8000	Uinta	44.5	45.1	48.9	14.9	14.1	15.7
28	Lost Lake	Provo River	"	18mi.E.Kamas	4&5-2S-9E	9900	Wasatch	70.0	72.0	69.3	24.2	20.3	22.5
33	East Portal	Strawberry L.	"	25mi.E.Provo	36-7S-6E	7600	Uinta	38.2	38.7	41.9	12.6	10.9	11.9
33A	E.Port.Strawbry D.	" "	"	24mi.E.Provo	34&35-7S-6E	8000	"	61.0	62.0	65.7	20.8	18.0	19.5
34	Hewinta R.S.	West Fork	"	33mi.SE.Evanston	33-3N-13E	9500	Wasatch	34.8	40.6	32.0	8.9	9.7	7.4
35	Hole-In-Rock	Beaver Cr.	"	47mi.SE. "	13-2N-15E	9150	Ashley	25.8	40.0	19.8	5.5	7.7	3.6
36	Lake Fork Mtn.	Yellowstone Cr.	"	4mi.E.Moon Lake	2&3-2N-5W	10500	"	44.1	55.3	24.7	9.9	12.2	7.9
37	Paradise Park	Whiterocks R.	"	25mi.NW.Vernal	7-3N-1E	10500	"	--	--	--	--	--	--
39	King's Cabin	Brush Creek	"	18mi.N.Vernal	22-1S-21E	8800	"	37.8	50.6	48.0	9.8	13.3	12.2
40	Indian Canyon	Strawberry R.	"	27mi.SW.Duchesne	2-11S-10E	9100	Uinta	37.5	48.2	39.0	9.5	12.0	10.3
41	Gooseberry Res.	Gooseberry Cr.	"	7mi.NE.Fairview	25-11S-5E	8700	Manti	58.3	53.2	58.0	20.9	17.7	19.0
42	Mammoth R.S.	" "	"	" " "	13&23-13S-5E	8800	"	62.4	59.8	60.5	22.6	20.6	21.1
42A	Stanley Ranch	Clear Cr.	"	1mi.N.Scofield	32-12S-7E	7600	OffForest	18.2	26.6	19.0	6.2	12.8	6.9
42B	Dry Valley Divide	Fish Creek	"	7mi.NE. "	20-12S-8E	7800	" "	28.8	35.5	29.0	9.2	16.0	9.6
42C	Clear Creek	Clear Creek	"	1mi.N.Clear Cr.	28-13S-7E	8150	" "	21.5	33.9	22.9	7.9	13.7	8.3
43	Hntngtn-Hrseshoe	Huntington Cr.	"	7mi.E.Fairview	12&13-14S-5E	9800	Manti	75.4	70.2	75.3	26.8	25.2	23.3
53	Widtsoe Esclnte	E.Fk.Escalante	"	6mi.E.Widtsoe	22-34S-1W	9500	Powell	31.7	43.8	39.9	10.1	12.6	12.1
					Average for Drainage			41.6	43.5	40.6	13.1	12.9	12.1

@Average for period of record.

COLORADO RIVER WATERSHED

Summary of Federal and State Cooperative Snow Surveys

Issued April 10, 1945 at Fort Collins, Colorado

No.	Main Drainage and Snow Cover	Local Drainage	Location: State	Locality	Description	Elev.	National Forest	Apr. 1 Snow Cover Measurements: Av. Snow Depth Av.@	Av. Snow Depth 1944	Av. Snow Depth 1945	Av. Water Content Av.@	Av. Water Content 1944	Av. Water Content 1945
	COLORADO RIVER (Above Grand Junction)							In.	In.	In.	In.	In.	In.
7	Park View*	Willow Cr.	Colo.	7mi.SE.Rand	24-5N-78W	9200	Routt	33.8	32.3	32.1	10.0	7.5	7.8
12	Phantom Valley	Colorado R.	"	11mi.N.Grand L.	7-5N-75W	9300	Ry.Mtn.N.P.	33.6	30.1	35.6	9.5	6.2	9.9
16	Berthoud Pass	Fraser R.	"	4mi.S.West Port.	35-2S-75W	9700	Arapaho	52.1	48.9	50.0	15.4	12.9	14.2
19	Tennessee Pass*	Eagle River	"	Tennessee Pass	21-8S-80W	10200	San Isabel	34.4	30.3	25.5	9.0	8.2	6.9
33	Ind. Pass Tunnel	Lincoln Gulch	"	W.Port.Tunnel	30-11S-82W	10200	WhiteRiver	53.5	48.7	53.8	17.6	14.4	15.8
34	N.Lost Trail Cr.	Crystal R.	"	3mi.E.Marble	20-11S-87W	9200	" "	46.9	50.7	50.2	14.4	16.3	18.0
37	M.Fork Camp Gr.	Williams Fk.	"	13mi.N.Dillon	16-3S-77W	9000	Arapaho	34.6	28.3	35.0	9.9	6.4	9.6
44	Fiddler Gulch	Eagle River	"	2mi.E.Mitchell	1-8S-80W	11000	WhiteRiver	50.3	43.9	44.5	14.0	11.2	12.1
45	Nast	Frying Pan.R.	"	23mi.SE.Basalt	1-9S-83W	8700	" "	21.4	23.4	17.1	5.9	5.4	4.4
56	Mesa Lakes	Mesa Creek	"	15mi.E.Palisade	35-11S-96W	10000	Grand Mesa	59.0	61.6	61.5	18.6	18.0	20.7
59	Lulu	Lulu Creek	"	14mi.N.Grand L.	25-6N-76W	10200	Ry.Mtn.N.P.	54.1	--	57.7	16.7	--	16.1
62	Willow Creek P.	Willow Cr.	"	Willow Cr.Pass	1-4N-78W	9500	Arapaho	42.2	37.0	41.3	12.2	8.9	11.8
64	N.Inlet Grand L.	N.Inlet Cr.	"	4mi.NE.Grand L.	26-4N-75W	9000	Ry.Mtn.N.P.	30.1	24.2	34.0	8.4	5.2	10.2
65	Lake Irene	Beaver Creek	"	1mi.SW.Milner P.	8-5N-75W	10600	" " " "	61.9	59.9	55.9	19.5	14.4	17.8
66	Thunderbolt Peak	Buchanan Cr.	"	5mi.E.Monarch L.	22-2N-74W	9500	Arapaho	50.6	47.3	44.6	16.5	14.7	20.9
69	Arrow	S.Ranch Cr.	"	Arrow	34-1S-75W	9900	"	33.8	33.6	37.1	9.1	8.6	11.0
70	Lapland	St.LouisCr.	"	7mi.SW.Fraser	16-2S-76W	9300	"	36.8	36.2	34.6	10.7	8.2	10.1
79	Fremont Pass #2	Blue River	"	Fremont Pass	2-8S-79W	11400	"	52.1	43.3	50.6	15.7	10.9	12.5
91	Lynx Pass No. 2	Rock Cr.	"	7 mi.NE.Toponas	27-2N-83W	9100	Routt	42.2	40.4	38.9	12.6	9.9	11.0
96	Shrine Pass	Blue River	"	Shrine Pass	15-6S-79W	10500	Arapho	54.4	47.4	53.7	16.3	11.6	14.8
97	Grizzly Peak	" "	"	1mi.W.LovelandP.	2-5S-76W	11250	"	53.5	47.6	50.3	16.3	12.7	15.3
					Average for Drainage			43.9	40.8	42.3	13.1	10.6	12.7
	YAMPA RIVER												
6	Dry Lake	Soda Creek	Colo.	4mi.NE.SteamSpgs	26-7N-84W	8200	Routt	57.4	50.1	61.0	20.3	15.2	23.3
8	Columbine Lodge*	Harrison Cr.	"	Rbt.Ears Pass	21-5N-82W	9300	"	64.9	68.0	65.5	21.7	16.6	22.7
9	Elk River	IndependenceCr.	"	Columbine	6-10N-85W	8700	"	54.6	54.7	64.1	16.9	15.3	22.6
91	Lynx Pass No.2*	Morrison Cr.	"	7mi.NE.Toponas	27-2N-83W	9100	"	42.2	40.4	38.9	12.6	9.9	11.0
10	Rambler R.S.	Little Snake R.	Wyo.	13mi.SW.Encmpmnt	25-14N-86W	8600	MedicineBow	--	--	--	--	--	--
					Average for Drainage			54.8	53.3	57.4	17.9	14.2	19.9
	WHITE RIVER												
35	Burro Mountain	N.Elk Creek	Colo.	8mi.S.Buford	15-2S-91W	9000	WhiteRiver	55.4	53.7	61.0	18.7	16.4	19.4
36	Rio Blanco	White River	"	4mi.NW.TrappersL	28-1N-88W	8500	" "	45.2	38.0	47.9	15.4	10.1	20.6
					Average for Drainage			50.3	45.8	54.4	17.0	13.2	20.0

*On adjacent drainage

©Average for period of record

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			State	Locality	Description			Av. Snow Depth			Av. Water Content		
								Av.©	1944	1945	Av.©	1944	1945
								In.	In.	In.	In.	In.	In.
	GUNNISON RIVER												
18	Crested Butte	Slate River	Colo.	3mi.N.Crested B.	22-13S-86W	9000	Gunnison	46.2	47.3	43.7	15.4	14.0	15.0
42	Marshall Creek	Marshall Cr.	"	Marshall Pass	24-48N-6E	10800	"	45.8	41.9	41.3	13.7	12.1	13.2
43	Poncha Creek*	" "	"	" "	19-48N-7E	10500	San Isabel	37.5	33.6	37.2	11.6	10.4	11.7
53	Alexander Lake	Kiser Creek	"	10mi.N.Cedaredge	2-12S-95W	10000	GrandMesa	73.9	80.3	78.0	24.7	26.0	26.6
55	Snowshoe Mesa	Snowshoe Cr.	"	16mi.NE.Paonia	14-13S-89W	7500	Gunnison	25.1	30.2	26.3	8.1	10.6	9.8
58	Ironton Park	Red Mtn. Cr.	"	5mi.S.Ouray	29-43N-7W	9800	Uncompahgre	44.0	48.6	39.5	14.4	14.3	11.4
85	Trickle Divide	Surface Cr.	"	13mi.N.Cedaredge	23-11S-94W	10000	Grand Mesa	83.9	99.2	92.7	28.2	33.6	32.5
87	Park Reservoir	" "	"	11mi." "	34-11S-94W	9500	" "	79.1	90.4	86.8	26.3	30.6	30.8
89	Porphyry Creek	Porphyry Cr.	"	Monarch Pass	19-49N-6E	10800	Gunnison	55.3	53.8	53.2	17.1	14.3	18.4
94	Sunshine Mt.No.2	Henson Cr.	"	10mi.W.Lake City	35-44N-6W	10200	Gunnison	39.5	41.1	37.1	12.2	13.1	9.8
98	Taylor Res.	Taylor River	"	Taylor Park Res.	24-14S-83W	9100	"	--	--	29.7	--	--	8.6
					Average for Drainage			53.0	56.6	53.6	17.2	17.9	17.9
	DOLORES RIVER												
23	Rico	Dolores R.	Colo.	2mi.S.Rico	11-38N-11W	8700	Montezuma	31.6	36.6	34.9	9.1	11.5	9.4
24	Telluride	San Miguel R.	"	Telluride	6-42N-8W	8600	"	27.1	35.8	33.0	8.0	10.6	8.2
25	Lizard Head	Dolores R.	"	10mi.N.Rico	24-41N-10W	10300	"	57.7	58.6	59.2	18.1	19.8	19.1
90	Lone Cone	Ground Hog Cr.	"	16mi.N.W.Rico	23-41N-13W	8900	"	42.8	44.0	44.1	14.8	13.8	14.5
					Average for Drainage			39.8	43.8	42.8	12.5	13.9	12.8
	SAN JUAN RIVER												
26	Wolf Creek Pass*	Wolf Creek	Colo.	Wolf Creek Pass	4-37N-2E	10000	Rio Grande	85.9	98.2	88.4	31.4	36.8	33.3
29	Upper San Juan	" "	"	4mi.W.Wolf Cr.P.	10-37N-1E	10000	San Juan	100.1	112.5	101.1	35.5	42.1	35.8
30	Silverton Sub.S.	Animas R.	"	2mi.NE.Silverton	10-41N-7W	9400	" "	20.3	27.9	19.4	4.7	6.8	3.4
31	Cascade	Cascade Cr.	"	5mi.N.Electra L.	12-39N-9W	8850	" "	35.4	45.3	40.8	11.4	14.0	13.7
93	Granite Peaks	Los Pinos R.	"	11mi.NE.Columbus	24-37N-6W	7950	San Juan	25.6	31.5	23.9	11.5	15.8	5.9
1,7	Chama Divide*	Amargo R.	N.Mex.	6mi.W.Chama	36.9N106.7W	7750	OffForest	10.2	10.8	17.4	3.3	2.8	5.3
18	Chamita*	Navajo R.	"	6mi.N.W.Chama	36.9N106.7W	8500	" "	32.0	30.2	36.0	10.3	10.1	11.4
					Average for Drainage			44.2	50.9	46.7	15.4	18.3	15.5

*On adjacent drainage
©Average for period of record

COLORADO RIVER WATERSHED

Summary of Federal and State Cooperative Snow Surveys

Issued April 10, 1945, at Fort Collins, Colo.

No.	Main Drainage and Snow Course	Local Drainage	Location: State	Location: Locality	Location: Description	Elev.	National Forest	Apr. 1 Snow Cover Measurements: Av. Snow Depth: Av.@	Av. Snow Depth: 1944	Av. Snow Depth: 1945	Av. Water Content: Av.@	Av. Water Content: 1944	Av. Water Content: 1945
								In.	In.	In.	In.	In.	In.
	GILA RIVER												
11	Frisco Divide	Blue River	N.Mex.	6mi.S.Luna	31-6S-20W	8000	Apache	2.0	2.1	8.7	0.6	0.7	2.9
14	State Line	" "	" "	Alpine/Luna	6-6S-21W	8000	"	1.4	0.0	7.5	0.5	0.0	2.6
22	Taylor Creek	Taylor Creek	" "	2mi.NE.Inmans	20-10S-10W	7850	Gila	0.0	0.0	0.0	0.0	0.0	0.0
3	Nutrioso	San Fran. R.	Ariz.	5mi.SE.Nutrioso	23-6N-30E	8500	Apache	0.9	0.0	4.2	0.3	0.0	1.4
4	Beaver Head	Castle Cr.	"	11mi.SW.Alpine	13-4N-30E	8000	"	2.1	0.0	10.5	0.8	0.0	3.5
5	Coronado Trail	Coleman Cr.	"	4mi.S. "	26-5N-30E	8000	"	2.5	0.0	11.1	0.9	0.0	4.0
					Average for Drainage			1.5	0.4	7.0	0.5	0.1	2.4
	SALT RIVER												
4	Beaver Head*	Beaver Cr.	Ariz.	11mi.SW.Alpine	13-4N-30E	8000	Apache	2.1	0.0	10.5	0.8	0.0	3.5
5	Coronado Trail*	Coyote Cr.	"	4mi.S. "	26-5N-30E	8000	"	2.5	0.0	11.1	0.9	0.0	4.0
6	McNary	Salt River	"	3mi.NW.McNary	14-8N-23E	7200	W.M.Ind.Res.	0.6	0.0	4.2	0.2	0.0	1.8
7	Forestdale	" "	"	5mi.SW.Showlow	2-9N-21E	6000	" " " "	0.0	0.0	0.2	0.0	0.0	0.1
9	Milk Ranch	" "	"	4mi.W.McNary	28-8N-23E	7000	" " " "	0.0	0.0	0.4	0.0	0.0	0.2
					Average for Drainage			1.0	0.0	5.3	0.4	0.0	1.9
	COLORADO (Green to Virgin	Rivers)											
47	G.B.E.S.Alpine*	Seeley Creek	Utah	8mi.SE.Ephraim	26-17S-4E	10200	Manti	65.7	72.1	69.2	22.3	21.9	20.8
48	Seeley Cr.R.S.	" "	"	9mi. " "	25-17S-4E	10000	"	63.3	67.3	73.4	21.2	20.1	20.4
51	Fish Lake	Fremont Cr.	"	2mi.SW.FishLake	35-26S-1E	8700	FishLake	25.8	40.5	25.9	6.5	5.3	5.0
54	Bryce Canon N.P.*	Paria River	"	Bryce Canyon	36-36S-4W	8000	Bryce N.P.	18.0	31.4	29.6	6.2	9.3	8.8
64	La Sal Mountain	Mill Creek	"	14mi.SE.Moab	29-26S-24E	8500	La Sal	34.1	40.1	40.7	9.9	10.7	12.5
65	Buckboard Flat	Montezuma Cr.	"	6mi.W.Monticello	36-33S-22E	9000	" "	49.8	65.1	63.0	16.1	20.9	19.6
					Average for Drainage			42.8	52.8	50.3	13.7	14.7	14.5
	VIRGIN RIVER												
56	Gravel Spgs.Jnct.	Virgin River	Utah	31mi.N.Kanab	22-38S-6W	7500	Dixie	17.0	28.7	30.3	6.8	11.7	11.8
57	Harris Flat R.S.*	" "	"	29mi.SE.Cedar	24-38S-7W	7700	"	31.2	40.1	44.4	11.7	16.8	14.8
58	Duck Creek R.S.*	N.Fk.Virgin R.	"	22mi. " "	11-38S-8W	8560	"	53.1	55.3	68.8	18.5	17.8	24.4
59	Cedar Breaks*	Virgin River	"	14mi. " "	13-37S-9W	10200	"	74.4	76.4	84.6	26.5	29.0	31.6
61	Webster Flats RS*	" "	"	11mi. " "	20-37S-9W	9200	"	58.5	68.9	67.9	21.2	24.5	21.0
					Average for Drainage			46.8	53.9	59.2	16.9	20.0	20.7

*On adjacent drainage

@Average for period of record.

The following organizations cooperate in the snow surveys and irrigation water supply forecasts for the Colorado, Missouri-Arkansas and Rio Grande watersheds by furnishing funds or services.

STATE
- Colorado State Engineer
- Wyoming State Engineer
- Utah State Engineer
- New Mexico State Engineer
- Montana State Engineer
- Nebraska State Engineer
- Colorado Experiment Station
- Colorado Extension Service
- Montana Experiment Station
- Utah Experiment Station

FEDERAL
- Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- Department of Interior
  - Bureau of Reclamation
  - Indian Service
  - Geological Survey
  - National Park Service
- Department of Commerce
  - Weather Bureau
- War Department
  - Army Engineer Corps

PUBLIC UTILITIES
- Colorado Public Service Company
- Western Colorado Power Company
- Montana Power Company
- Denver and Rio Grande Western R. R. Company

MUNICIPALITIES
- City of Bozeman
- City of Denver
- City of Boulder

WATER USERS ORGANIZATIONS
- Poudre Valley Water Users' Association
- Arkansas Valley Ditch Association
- Colorado River Water Conservation District

IRRIGATION PROJECTS
- Farmers Reservoir and Irrigation Company
- San Luis Valley Irrigation District
- Santa Maria Reservoir Company
- Costilla Land Company
- Uncompahgre Valley Water Users' Association
- Wyoming Development Company
- Goshen Irrigation District
- Kendrick Project
- Pathfinder Irrigation District
- Salt River Valley Water Users' Association
- San Carlos Irrigation and Drainage District

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